Reg. No. : | | | | | | | | | | |

Question Paper Code: 42507

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Second Semester

Electronics and Instrumentation Engineering

14UEI207 - ELECTRONIC DEVICES AND CIRCUITS

(Common to Instrumentation and Control Engineering)

(Regulation 2014)

Duration: 1.15 hrs Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. Intrinsic semiconductor exhibits
   (a) large forbidden energy gap (b) small forbidden energy gap
   (c) No forbidden energy gap (d) forbidden energy gap

2. Example for trivalent impurity is
   (a) Arsenic (b) Antimony (c) Indium (d) Bismuth

3. A D-MOSFET differs from a JFET in the sense that it has no
   (a) channel (b) gate (c) P-N junctions (d) substrate

4. If properly biased, JFET with act as a
   (a) current controlled current source (b) voltage controlled voltage source
   (c) voltage controlled current source (d) current controlled voltage source

5. The decibel is a measure of
   (a) power (b) voltage (c) current (d) power level

6. The common emitter amplifier is characterized by

(a) very high input impedance (b) signal phase reversal

(c) low voltage gain (d) very small leakage current

7. Oscillator use following feedback

(a) negative (b) positive (c) both negative and positive (d) none of the above

8. Feedback in amplifiers always helps to

(a) control its output (b) increase its gain
(c) decrease its input impedance (d) stabilize its gain

9. A bistable multivibrator

(a) oscillates between two stables states without any trigger pulses
(b) has three stable states
(c) is used for generating square wave
(d) has two stable states

10. Diode that is used to add or restore a DC level to an electrical signal is

(a) clipper or limiter (b) clamper (c) zener diode (d) tunnel diode

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. Explain the construction and working characteristics of PN diode with a neat sketch. (8)

12. Explain the working of D-MOSFET, With the help of suitable diagrams, (8)

13. Draw the h-parameter equivalent circuit for a typical common emitter amplifier (8)

14. Discuss with circuit diagram and explain the working of Wein bridge oscillators (8)

15. Explain the working of single phase centre tapped full wave rectifier (with and With out filter) with neat diagrams and derive the necessary equations. (8)